

UNITED STATES STEEL -- STANDARD PIPE CARBON STEEL, 4C018  
MATERIAL SAFETY DATA SHEET  
UNITED STATES STEELNSN: 343900N018618  
Manufacturer's CAGE: 61497  
Part No. Indicator: A  
Part Number/Trade Name: STANDARD PIPE CARBON STEEL, 4C018

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General Information  
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Company's Name: UNITED STATES STEEL CORPORATION  
Company's P. O. Box: 206  
Company's City: PITTSBURG  
Company's State: PA  
Company's Country: US  
Company's Zip Code: 15230-0206  
Company's Emerg Ph #: 412-433-6840; 412-433-5811  
Company's Info Ph #: 412-433-6840; 412-433-5811  
Record No. For Safety Entry: 001  
Tot Safety Entries This Stk#: 001  
Status: SMJ  
Date MSDS Prepared: 01AUG88  
Safety Data Review Date: 16SEP91  
MSDS Serial Number: BKZVL  
Hazard Characteristic Code: N1

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Ingredients/Identity Information  
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Proprietary: NO  
Ingredient: IRON OXIDE  
Ingredient Sequence Number: 01  
Percent: 98-99  
NIOSH (RTECS) Number: NO7400000  
CAS Number: 1309-37-1  
OSHA PEL: 10 MG/M3 (FE)  
ACGIH TLV: 5 MG/M3 (FE), B2; 9293

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Proprietary: NO  
Ingredient: GRAPHITE, SYNTHETIC  
Ingredient Sequence Number: 02  
Percent: INGNAME  
NIOSH (RTECS) Number: FF5250100  
CAS Number: 7440-44-0  
OSHA PEL: 15 MG/M3 TDUST  
ACGIH TLV: 2 MG/M3 TDUST; 9293

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Proprietary: NO  
Ingredient: MANGANESE (SARA III)  
Ingredient Sequence Number: 03  
Percent: 1.25  
NIOSH (RTECS) Number: OO9275000  
CAS Number: 7439-96-5  
OSHA PEL: (C) 5 MG/M3 DUST  
ACGIH TLV: 5 MG/M3 DUST 9293

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Proprietary: NO  
Ingredient: PHOSPHOROUS (YELLOW) (SARA III)  
Ingredient Sequence Number: 04

Percent: 0.04  
NIOSH (RTECS) Number: TH3500000  
CAS Number: 7723-14-0  
OSHA PEL: 0.1 MG/M3  
ACGIH TLV: 0.1 MG/M3; 9192

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Proprietary: NO  
Ingredient: SULFUR. PEL: 15 MG/M3 TDUST; 5 MG/M3 RDUST.  
Ingredient Sequence Number: 05  
Percent: 0.035  
NIOSH (RTECS) Number: WS4250000  
CAS Number: 7704-34-9  
OSHA PEL: SEE INGREDIENT NAME  
ACGIH TLV: 10 MG/M3

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Proprietary: NO  
Ingredient: ZINC OXIDE  
Ingredient Sequence Number: 06  
Percent: .70-6.0  
NIOSH (RTECS) Number: ZH4810000  
CAS Number: 1314-13-2  
OSHA PEL: 15MG/M3 TDUST/5 FUME  
ACGIH TLV: 10MG/M3 TDUST; 9293

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Proprietary: NO  
Ingredient: SUPP DATA: AGENTS MAY ACT SYNERGISTICALLY W/INHAL OF OXIDES,  
FUMES/DUSTS OF THIS PROD TO CAUSE TOXIC EFTS. STEEL (ING 8)  
Ingredient Sequence Number: 07  
NIOSH (RTECS) Number: 9999999ZZ  
OSHA PEL: NOT APPLICABLE  
ACGIH TLV: NOT APPLICABLE

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Proprietary: NO  
Ingredient: ING 7: PRODS UNDER NORMAL CONDITIONS DO NOT PRESENT AN INHAL,  
INGEST, CONT HLTH/ENVIRONMENTAL HAZ. HOWEVER, OPER (ING 9)  
Ingredient Sequence Number: 08  
NIOSH (RTECS) Number: 9999999ZZ  
OSHA PEL: NOT APPLICABLE  
ACGIH TLV: NOT APPLICABLE

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Proprietary: NO  
Ingredient: ING 8: SUCH AS BURNING, WELDING, SAWING, BRAZING, GRINDING &  
POSSIBLY MACHINING ETC, WHICH RESULT IN ELEVATING (ING 10)  
Ingredient Sequence Number: 09  
NIOSH (RTECS) Number: 9999999ZZ  
OSHA PEL: NOT APPLICABLE  
ACGIH TLV: NOT APPLICABLE

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Proprietary: NO  
Ingredient: ING 9: THE TEMP OF PROD TO/ABOVE ITS MELTING POINT/RESULT IN  
GENERATION OF AIRBORNE PARTICULATES, MAY PRESENT HLTH HAZ.  
Ingredient Sequence Number: 10  
NIOSH (RTECS) Number: 9999999ZZ  
OSHA PEL: NOT APPLICABLE  
ACGIH TLV: NOT APPLICABLE

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Physical/Chemical Characteristics

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Appearance And Odor: METALLIC GRAY SOLID WITH NO ODOR.  
Boiling Point: N/A  
Melting Point: SUPP DATA  
Vapor Pressure (MM Hg/70 F): N/A  
Vapor Density (Air=1): N/A  
Specific Gravity: 7.85  
Evaporation Rate And Ref: NOT APPLICABLE  
Solubility In Water: NOT SOLUBLE  
Percent Volatiles By Volume: N/A  
pH: N/A  
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Fire and Explosion Hazard Data  
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Flash Point: NOT FLAMMABLE  
Extinguishing Media: USE MEDIA SUITABLE FOR SURROUNDING FIRE (FP N).  
Special Fire Fighting Proc: USE NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N). NOT FLAMMABLE OR COMBUSTIBLE.  
Unusual Fire And Expl Hazrds: STEEL PRODUCTS IN THE SOLID STATE PRESENT NO FIRE OR EXPLOSION HAZARD AND DO NOT CONTRIBUTE TO THE COMBUSTION OF OTHER MATERIALS.  
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Reactivity Data  
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Stability: YES  
Cond To Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.  
Materials To Avoid: WILL REACT WITH STRONG ACID TO LIBERATE HYDROGEN.  
Hazardous Decomp Products: AT TEMPERATURES ABOVE THE MELTING POINT, MAY LIBERATE FUMES CONTAINING OXIDES OF IRON AND ALLOYING ELEMENTS.  
Conditions To Avoid (Poly): NONE SPECIFIED BY MANUFACTURER.  
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Health Hazard Data  
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LD50-LC50 Mixture: SEE INGREDIENT 3  
Route Of Entry - Inhalation: NO  
Route Of Entry - Skin: NO  
Route Of Entry - Ingestion: NO  
Health Haz Acute And Chronic: CHRONIC INHAL OF HIGH CONC OF IRON OXIDE FUMES/DUSTS MAY LEAD TO A BENIGN PNEUMOCONIOSIS (SIDEROSIS). INHAL OF HIGH CONC OF FERRIC OXIDE MAY POSSIBLY ENHANCE THE RISK OF LUNG CANCER DEVELOPMENT IN WORKERS EXPOSED TO PULM CARCINOGENS. THE INHAL OF HIGH CONC OF FRESHLY FORMED OXIDE FUMES & DUSTS OF (SEE EFTS OF OVEREXP)  
Carcinogenicity - NTP: NO  
Carcinogenicity - IARC: NO  
Carcinogenicity - OSHA: NO  
Explanation Carcinogenicity: NOT RELEVANT  
Signs/Symptoms Of Overexp: HLTH HAZ: MANGANESE, COPPER, LEAD AND/OR ZINC IN THE RESPIRABLE PARTICLE SIZE RANGE CAN CAUSE AN INFLUENZA-LIKE ILLNESS TERMED METAL FUME FEVER. TYPICAL SYMP LAST 12 TO 48 HRS & ARE CHARACT BY METALLIC TASTE IN MOUTH, DRYNESS & IRRIT OF THROAT, FOLLOWED BY WEAKNESS, MUSCLE PAIN, FEVER & CHILLS. CONTINUOUS (SUPP DATA)  
Med Cond Aggravated By Exp: INDIVIDUALS W/CHRONIC RESP DISORDERS (I.E. ASTHMA, CHRONIC BRONCHITIS, EMPHYSEMA, ETC) MAY BE ADVERSELY AFFECTED BY ANY FUME OR AIRBORNE PARTICULATE MATTER EXPOSURE.  
Emergency/First Aid Proc: INHAL:FOR OVEREXP TO AIRBORNE FUMES & PARTICULATES,REMOVE EXPSD PERSON TO FRESH AIR.IF BRTHG DFCLT/STOPS, ADMIN ARTF RESP/OXYGEN AS INDICATED.CALL MD IMMED.TREAT METAL FUME FEVER BY BED

REST & ADMIN PAIN & FEVER REDUCING MEDICATION.SKIN:IF THERMAL BURN OCCURS,  
FLUSH AREA W/COLD WATER.CALL MD.FOR MECH ABRASIONS,CALL MD.EYES:FLUSH W/LRG  
AMTS OF WATER FOR AT LEAST 15 MIN TO REMOVE PARTICLES. CALL MD.

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Precautions for Safe Handling and Use  
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Steps If Matl Released/Spill: NOT APPLICABLE TO STEEL IN SOLID STATE.  
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.  
Waste Disposal Method: DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL  
REGULATIONS.  
Precautions-Handling/Storing: OPER W/POTENTIAL FOR GENERATING HIGH CONC OF  
AIRBORNE PARTICULATES SHOULD BE EVAL & CONTROLLED AS NEC. AVOID BREATHING  
METAL FUMES AND/OR DUSTS.  
Other Precautions: NONE SPECIFIED BY MANUFACTURER.

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Control Measures  
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Respiratory Protection: NIOSH/MSHA APPROVED DUST AND FUME RESPIRATORS  
SHOULD BE USED TO AVOID EXCESSIVE INHALATION OF PARTICULATES. APPROPRIATE  
RESPIRATOR SELECTION DEPENDS ON THE MAGNITUDE OF EXPOSURE.  
Ventilation: LOC EXHST VENT SHOULD BE PROVIDED WHEN WELDING/BURNING/  
SAWING/BRAZING/GRINDING/MACHINING TO PVNT EXCESS DUST/FUME EXPOS  
Protective Gloves: PROTECTIVE GLOVES.  
Eye Protection: CHEMICAL WORKERS GOGGLES (FP N).  
Other Protective Equipment: DEPENDING UPON CNDTNS OF USE & SPECIFIC WORK  
SITUATIONS, ADDITIONAL PROTECTIVE EQUIP AND/OR CLOTHING MAY BE REQUIRED.  
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.  
Suppl. Safety & Health Data: MP: BASE METAL-2750F; METALLIC COATING-800-  
900F. EFTS OF OVEREXP: EXPOS TO HIGH CONC OF MANGANESE CAN CAUSE CNS  
DISORDERS & "MANGANESE PNEUMONIA". FIBROSIS OF LUNG TISS FROM MANGANESE  
EXPOS HAS ALSO BEEN RPTD FOR PRODS CONTAINING MANGANESE ONLY. LONG TERM  
INHAL EXPOS TO HIGH CONC (OVEREXP) TO PNEUMOCONIOTIC (SEE ING 7

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Transportation Data  
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Trans Data Review Date: 91290  
DOT PSN Code: ZZZ  
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
IMO PSN Code: ZZZ  
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION  
IATA PSN Code: ZZZ  
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
AFI PSN Code: ZZZ  
AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
Additional Trans Data: NOT REGULATED FOR TRANSPORTATION

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Disposal Data  
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Label Data  
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Label Required: YES  
Technical Review Date: 16SEP91  
Label Date: 16SEP91  
Label Status: G  
Common Name: STANDARD PIPE CARBON STEEL, 4C018  
Chronic Hazard: YES

Signal Word: WARNING!

Acute Health Hazard-Moderate: X

Contact Hazard-Slight: X

Fire Hazard-None: X

Reactivity Hazard-None: X

Special Hazard Precautions: THIS PRODUCT IS NOT HAZARDOUS AS SHIPPED. HAZARDS MAY OCCUR DURING WELDING, BRAZING, BURNING, SAWING, GRINDING AND MACHINING OPERATIONS. ACUTE:INHALATION MAY CAUSE METAL FUME FEVER. SYMPTOMS INCLUDE METALLIC TASTE IN MOUTH, DRYNESS AND IRRITATION OF THROAT FOLLOWED BY WEAKNESS,MUSCLE PAIN, FEVER AND CHILLS. MAY CAUSE CENTRAL NERVOUS SYSTEM DISORDERS AND MANGANESE PNEUOMINA. CHRONIC:MAY CAUSE SIDEROSIS.

Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

Label Name: UNITED STATES STEEL CORPORATION

Label P.O. Box: 206

Label City: PITTSBURG

Label State: PA

Label Zip Code: 15230-0206

Label Country: US

Label Emergency Number: 412-433-6840; 412-433-5811